

EXHIBIT 7

MyClevelandClinic.Org: [Lead Poisoning: Causes, Symptoms, Testing & Prevention \(clevelandclinic.org\)](https://my.clevelandclinic.org/health/diseases/11312-lead-poisoning)

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[HOME/HEALTH LIBRARY/DISEASES & CONDITIONS/LEAD POISONING](#)

Lead Poisoning

Lead poisoning is caused by exposure to high levels of lead. Lead is most commonly found in houses built before 1978. Symptoms of lead poisoning include headaches, cramps and hyperactivity. Lead poisoning can be diagnosed through a blood lead test. Treatment includes finding and removing the source of the lead to prevent further exposure.

Overview

What is lead poisoning?

[Lead poisoning](#) happens when your child is affected by high levels of lead exposure. Lead poisoning is usually caused by eating or drinking (ingesting) lead, but touching or breathing in the toxic metal can also cause it. Lead poisoning is when any detectable amount of lead is found in your child's blood.

Lead can affect many parts of your child's body, including their brain, nerves, blood, [digestive organs](#) and more. While lead poisoning can affect anyone, it's especially dangerous in children. It can damage your child's nervous system, brain and other organs. Lead poisoning can also lead to severe health, learning and behavioral problems, including sudden brain damage and long-term intellectual deficits.

What is lead?

Lead is a naturally occurring poisonous metal found in small amounts in the earth's crust. It's a toxic element that can cause serious health effects in humans and animals. Lead is especially dangerous to babies and young children. It can harm them even before they're born.

Where is lead found?

Lead is most commonly found in lead paint. Children who live in older houses with peeling lead paint or lead pipes are often affected. Lead can also contaminate:

- Herbal remedies or medicines.
- Toys and candies from foreign countries.
- Stained glass.
- Leaded crystal glassware.
- Glazed ceramic ware, including plates, pitchers and cups.

When was lead paint banned?

The United States banned lead-based paint in 1978. Before then, lead paint was used inside and outside houses. Older paint cracks and peels easily. When it cracks, it releases microscopic pieces of lead dust

into the air. Sanding or scraping the walls of an old house in preparation for a [remodel](#) can also release the lead dust.

This lead dust settles on the ground and everything around it. Children can become exposed to lead by putting objects in their mouths or by touching objects containing lead dust and then putting their hands in their mouths.

Since the ban of lead-based paint, lead poisoning cases have dropped. But it's still a major public health issue in certain areas of the country where older homes are located.

Who does lead poisoning affect?

Lead poisoning can affect anyone, but babies and children under the age of 6 are most at risk because their bodies are still developing. Because their bodies are still growing, their brains and [nervous systems](#) are more sensitive to the harmful effects of lead. In addition, babies and young children tend to pick up objects and put them in their mouths more frequently. These objects could be contaminated with lead.

Symptoms and Causes

What are the signs and symptoms of lead poisoning in children?

Often, children who have lead poisoning have no symptoms. Even healthy-looking children can have high levels of lead in their bodies. Symptoms of lead poisoning in children can include:

- [Cramps](#).
- Hyperactivity (restlessness, fidgeting and talking too much).
- Learning problems.
- Changes in behavior.
- Headaches.
- [Vomiting](#).
- Fatigue.
- [Anemia](#) (not enough hemoglobin in their blood).

What are the signs and symptoms of lead poisoning in adults?

Adults can be exposed to lead at work or other places. Symptoms that may develop in adults include:

- [Headaches](#).
- [Abdominal pain](#).
- Personality changes.
- Anemia.
- [Numbness](#) in feet and legs.

- Loss of sex drive.
- Infertility.

When do lead poisoning symptoms appear?

Sometimes, children and adults who've been exposed to lead have no symptoms. Other times, the symptoms of lead poisoning won't appear right away. When they do occur, the symptoms may develop over several weeks or months. Sometimes, symptoms flare up sporadically (at irregular times).

How do children get lead poisoning?

Children mainly get lead poisoning by swallowing and/or absorbing lead-based paint used in houses that were built before 1978. Lead paint gets into children's systems when they:

- Eat or touch peeling paint chips and flakes that contain lead.
- Put their hands, toys and other items covered with lead dust in their mouths.
- Breathe in lead dust.
- Chew on windowsills, furniture, door frames and other items covered with lead-based paint.
- Drink water from older water pipes that may leach lead.

How do adults get lead poisoning?

Adults can get lead poisoning by being exposed to lead through eating food and drinking water contaminated with lead. They may eat from dishes or drink from cups contaminated with lead. If you work in an environment with lead paint or are working on a home remodel, you could be exposed to lead dust.

What are the effects of lead poisoning in children?

Low blood lead levels in your child can affect virtually all the organs and systems in their body. These effects can include:

- Behavioral problems.
- [Learning difficulties](#).
- Lowered IQ (intelligence quotient).
- [Hyperactivity](#).
- Growth delay.
- [Hearing problems](#).

Higher blood lead levels can cause seizures and comas. In very rare cases, it can be fatal.

What are the effects of lead poisoning in adults?

Lead poisoning in adults can lead to serious health effects. These effects can include:

- [High blood pressure \(hypertension\)](#).
- Kidney problems.
- Reproductive issues.

Diagnosis and Tests

How is lead poisoning diagnosed?

If you think you or your child may have been exposed to lead, contact your healthcare provider. They'll ask about your symptoms and have you or your child get a blood lead test. This test will measure the amount of lead in your or your child's blood.

Management and Treatment

Is lead poisoning curable?

The effects of lead poisoning aren't reversible. But you can reduce blood lead levels and prevent further exposure by finding and removing the sources of lead from your child's home or environment.

If your child's blood lead levels are very high, your child's healthcare provider may treat them with a medication called a chelating agent. This medicine binds the lead in your child's blood and makes it easier for their body to get rid of it.

Your child's healthcare provider may also recommend whole-bowel irrigation. With this procedure, your child's healthcare provider gives your child a special solution called [polyethylene glycol](#) by mouth or through a stomach tube to wash out the contents of your child's stomach and intestines. Bowel irrigation is aimed at preventing further lead absorption if there are lead paint chips identified on an X-ray of your child's belly.

Prevention

What can I do to reduce my child's risk of lead poisoning?

Lead poisoning is preventable. Talk to your child's healthcare provider about ways you can prevent lead poisoning. Some ways you can help prevent lead poisoning include:

- Make sure your child eats healthy foods that are high in iron, calcium and [vitamin C](#), which help protect against lead poisoning.
- If you live in a house or apartment built before 1978, talk to your state or local health department about having your home's paint and dust tested for lead.
- If you rent your home, talk to your landlord about peeling and flaking paint. Call the health department if the paint isn't safely repaired.
- Wash your child's hands, bottles, pacifiers and toys frequently.
- Always [wash your hands](#) before eating.
- Always wipe your feet before entering the house, and leave your shoes at the door.

- Wipe floors and other surfaces with a damp mop or cloth regularly.
- If you have lead pipes, stagnant water or hot water can leach lead into your tap water. Let your faucet run cold water for one minute before using for drinking, cooking or making [baby formula](#).
- Don't try to remove lead-based paint yourself.
- Avoid any home remedies that contain lead.

What can adults do to prevent lead poisoning?

If you work with lead or are at risk of coming into contact with lead dust, you should:

- Use personal protective equipment.
- Change your clothing and shoes after work.
- Shower when you get home.

Should I be concerned about lead poisoning if I'm pregnant?

If you were affected by lead poisoning as a child, lead may have been deposited in your bones. During pregnancy, you may release the lead from your bones and pass it on to the developing fetus.

Pregnant people should also make sure to avoid new exposure to lead. A fetus can be harmed by lead poisoning even before birth. If your blood lead levels are too high, it can:

- Increase your risk for miscarriage.
- Cause your baby to be born too early and/or too small.
- Damage your baby's brain, nervous system and kidneys.
- Increase the likelihood of learning or behavioral problems in your child.

A note from Cleveland Clinic

Lead poisoning happens when your child is exposed to high amounts of lead. It's a serious condition and is also preventable. Lead can affect almost all your child's organs and symptoms. It can cause long-term health, behavioral and learning effects. Lead is most commonly found in homes that were built before 1978. If you live in an older home, talk to your local health department about testing your home for lead. If your child develops any of the symptoms of lead poisoning, make sure to see your child's healthcare provider right away. They can provide treatment and important resources for the future.

Medically Reviewed

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References

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